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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/583,797	05/31/2000	Rosario A. Uceda-Sosa	POU9-2000-0018-US1	9330
46369	7590	04/06/2006	EXAMINER	
HESLIN ROTHENBERG FARLEY & MESITI P.C. 5 COLUMBIA CIRCLE ALBANY, NY 12203			VO, LILIAN	
			ART UNIT	PAPER NUMBER
			2195	

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/583,797	<b>Applicant(s)</b> UCEDA-SOSA ET AL.	
	<b>Examiner</b> Lilian Vo	<b>Art Unit</b> 2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2006.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1 - 33, 36 - 47 and 49 - 51 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1 - 33, 36 - 47 and 49 - 51 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Claims 1 – 33, 36 – 47 and 49 - 51 are pending. Claims 34, 35 and 48 have been cancelled.

#### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 – 10, 21, 23, 36, 47 and 49 - 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lehman et al. "Efficient Locking for Concurrent Operations on B-Trees" (hereinafter Lehman).
4. Regarding **claim 1**, Lehman discloses a method of managing the locking of resources of a data repository (fig. 1, page 651, paragraph 5), said method comprising:

determining whether a relationship between one resource and another resource of a data is a containment-based relationship or whether the relationship is reference-based relationship (page 663, paragraph 14 - 15), wherein a data repository comprises a hierarchical structure of a plurality of resources (figs. 1, page 651, paragraph 5); said hierarchical structure comprising one or more resources having a reference-based relationship (fig. 7 and page 657, paragraph 4, page

663, paragraph 15) and one or more resources having a containment-based relationship (fig. 7 and page 657, paragraph 4, page 663, paragraph 14);

locking at least one resource of the one resource and the another resource using one type of locking strategy, in response to the determining indicating the relationship is a containment-based relationship (page 663, paragraphs 12 – 21); and

locking at least one resource of the one resource and the another resource using another type of locking strategy, in response to the determining indicating the relationship is a reference-based relationship (page 663, paragraphs 12 – 21).

With respect to locking at least one resource of the one resource and the another resource using type of locking strategy, in response to the determining indicating the relationship is a containment-based relationship or a reference-based relationship, Lehman discloses that locks are placed by the inserter according to a well-ordering on the nodes (page 663, paragraphs 11 – 21 and page 651, paragraph 8). In other words, different ways of locking are placed on the nodes according to the order of the nodes (relationship). Furthermore, Lehman uses at least one lock and at most a constant number of locks (three) at any time (page 668, paragraph 9 – 10).

Therefore, it would have been obvious for one of an ordinary skill in the art, at the time the invention was made, to utilize Lehman's teaching for the step of using different type of locking strategies as claimed to achieve the desire outcome because of its functional equivalent.

5. Regarding **claim 2**, as modified Lehman discloses the locking of said at least one resource is performed without locking at least one other resource of said plurality of resources (page 656, paragraph 4).

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6. Regarding **claim 3**, as modified Lehman discloses the locking of said at least one resource is further based on an operation to be performed (page 651, last paragraph).
7. Regarding **claim 10**, as modified Lehman discloses the operation comprises at least one of create, delete, read and write (page 668, last paragraph).
8. Regarding **claim 21**, as modified Lehman discloses the determining comprises employing a set of policies (page 663, paragraphs 14, 15).
9. Regarding **claim 49**, as modified Lehman discloses the one type of locking strategy comprises a chained locking strategy, and the another type of locking comprises a reference-based locking strategy (page 656, paragraph 3, page 657, paragraph 5 and page 663, paragraph 15).
10. Regarding **claim 50**, as modified Lehman discloses a containment-based relationship is a relationship in which there is only one reference from the one resource to the another resource (fig. 2 and 4).
11. Regarding **claim 51**, as modified Lehman discloses a reference-based relationship is a relationship in which there is one or more references from the one resource to the another resource (fig. 7).

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12. **Claims 4 – 9, 23, 36 and 47** are rejected on the same ground as stated in claims 1 – 3, 10 and 21 above.

13. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lehman et al. “Efficient Locking for Concurrent Operations on B-Trees”, as applied to claim 1 above, in view of Soltis et al (US 6,493,804),

14. Regarding **claim 22**, as modified Lehman did not clearly disclose the resource comprises at least one of a table and a directory. Nevertheless, Soltis discloses the resource comprises at least one of a table and a directory (Soltis: fig. 5). Therefore, it would have been obvious for one of an ordinary skill in the art, at the time the invention was made, to implement Lehman’s system with Soltis’ teaching and still be able to perform properly because of its similar structure.

15. Claims 11 – 14, 24 – 27 and 37 - 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lehman et al. “Efficient Locking for Concurrent Operations on B-Trees”, as applied to claims 1, 4 and 7 above, in view of Shaughnessy (US 5,555,388).

16. Regarding **claim 11**, as modified Lehman discloses the relationship is a containment-based relationship, wherein the at least one resource comprises a first resource and a second resource, the first resource referencing the second resource (Lehman: fig. 4). As modified Lehman did not clearly specify the locking comprises write locking the first resource in order to create an instance of the second resource. Nevertheless, the concept can be found from Shaughnessy in which a write locking the first resource in order to create an instance the second

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resource (col. 10, lines 8 – 12: “Suppose, for example, a user is copying an Orders table. With a write lock in place, other users can concurrently view the table but cannot change the table structure or contents until the lock is lifted ...”. Col. 10, lines 25 - 28). It would have been obvious for one of ordinary skill in the art, at the time the invention was made to incorporate this concept to modified Lehman to prevent other users from changing the contents of a family of objects (Shaughnessy: col. 9, line 66 – col. 10, line 1).

17. Regarding **claim 12**, as modified Lehman discloses the relationship is a containment-based relationship, wherein the at least one resource comprises a first resource and a second resource, the first resource referencing the second resource (Lehman: fig. 4), wherein the locking comprises write locking the first resource and the second resource in order to delete an instance of the second resource (Shaughnessy: col. 9, line 44 – col. 10, line 37).

18. Regarding **claim 13**, as modified Lehman discloses the relationship is a containment-based relationship, wherein the at least one resource comprises a first resource and a second resource, the first resource referencing the second resource (Lehman: fig. 4), wherein the locking comprises read locking the second resource in order to read therefrom (Shaughnessy: col. 9, line 18 – col. 10, line 37 and col. 15, lines 42 - 44).

19. Regarding **claim 14**, as modified Lehman discloses the relationship is a containment-based relationship, wherein the at least one resource comprises a first resource and a second resource, the first resource referencing the second resource (Lehman: fig. 4), wherein the locking

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comprises write locking the second resource in order to write thereto (Shaughnessy: col. 9, line 18 – col. 10, line 37).

20. **Claims 24 – 27 and 37 - 40** are rejected on the same ground as stated in claims 11 – 14 above.

21. Claims 15 –20, 28 – 33 and 41 - 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lehman et al. “Efficient Locking for Concurrent Operations on B-Trees”, as applied to claims 1, 4 and 7 above, in view of Annevelink (US 5,448,727).

22. Regarding **claim 15**, as modified Lehman discloses the relationship is a reference-based relationship, wherein the at least one resource comprises a first resource and a second resource, the first resource referencing the second resource (Lehman: fig. 7). As modified Lehman did not clearly disclose the locking comprises write locking the first resource in order to delete the first resource. However this concept can be found from Annevelink in which she discloses the reference-based relationship (Annevelink: col. 18, table 4 and fig. 6) and write locking the object in order to delete the object (Annevelink: col. 12, lines 27 – lines 31, lines 42 - 63). It would have been obvious for one of ordinary skill in the art, at the time the invention was made to incorporate this feature to modified Lehman to improve concurrency access to database.

23. Regarding **claim 16**, as modified Lehman discloses the relationship is a reference-based relationship, wherein the at least one resource comprises a first resource and a second resource, the first resource referencing the second resource (Lehman fig. 7), wherein the locking comprises



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write locking the first resource in order to create an instance of the second resource (Annevelink: col. 18, table 4, fig. 6, col. 11, lines 36 – 52, col. 12, lines 27 – lines 31, lines 42 – 63, col. 13, lines 25 – 46).

24. Regarding **claim 17**, as modified Lehman discloses the relationship is a reference-based relationship, wherein the at least one resource comprises a first resource and a second resource, the first resource referencing the second resource (Lehman fig. 7), wherein the locking comprises write locking the at least one instance of the first resource in order to delete the second resource (Annevelink: col. 18, table 4, fig. 6, col. 12, lines 27 – lines 31, lines 42 - 63).

25. Regarding **claim 18**, as modified Lehman discloses the relationship is a reference-based relationship, wherein the at least one resource comprises a first resource and a second resource, the first resource referencing the second resource (Lehman fig. 7), wherein the locking comprises read locking the first resource and the second resource in order to read the second resource (Annevelink: col. 18, table 4, fig. 6, col. 12, lines 27 – lines 31, lines 42 - 63).

26. Regarding **claim 19**, as modified Lehman discloses the relationship is a reference-based relationship, wherein the at least one resource comprises a first resource and a second resource, the first resource referencing the second resource (Lehman fig. 7), wherein the locking comprises read locking the first and second resource and write locking the second resource in order to write to the second resource (Annevelink: col. 18, table 4, fig. 6, col. 12, lines 27 – lines 31, lines 42 - 63).

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27. Regarding **claim 20**, as modified Lehman discloses the relationship is a reference-based relationship, wherein the at least one resource comprises a first resource, a second resource and a third resource, the first resource and the second resource referencing the third resource (Lehman fig. 7), wherein the locking comprises read locking the first and second resource and write locking the third resource in order to write the third resource (Annevelink: col. 18, table 4, fig. 6, col. 12, lines 27 – lines 31, lines 42 - 63).

28. **Claims 28 - 33 and 41 - 46** are rejected on the same ground as stated in claims 15 – 20 above.

#### *Response to Arguments*

29. Applicants' arguments with respect to claims 1, 4 and 7 have been considered but are moot in view of the new ground(s) of rejection as set forth above.

#### *Conclusion*

30. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

31. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lilian Vo whose telephone number is 571-272-3774. The examiner can normally be reached on Thursday from 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist at 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lilian Vo  
Examiner  
Art Unit 2195

lv  
March 30, 2006

  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY